

Essential Question

How Do Scientists Think?

Engage Your Brain!

Find the answer in the lesson.

When scientists

they follow steps and use tools to answer a question.

Active Reading

Lesson Vocabulary

- 1 Preview the lesson.
- 2 Write the 4 vocabulary terms here.

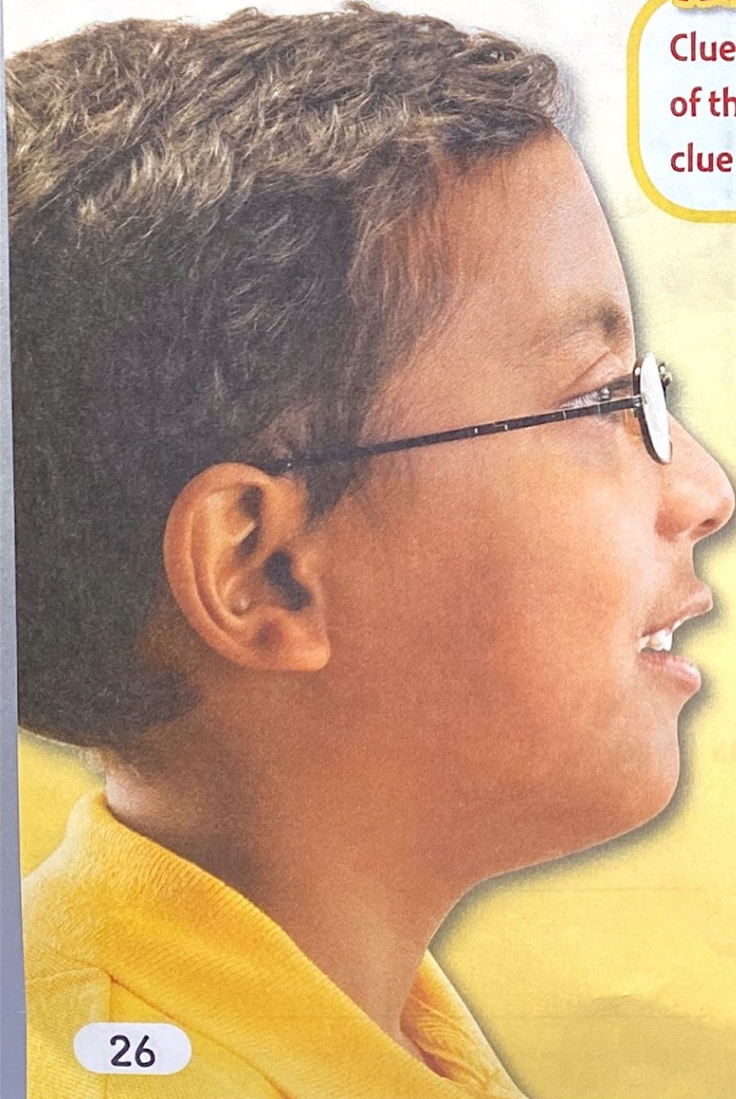
Let's Observe It!

Scientists **investigate**. They plan and do a test to answer a question or solve a problem. They use inquiry skills and science tools to help them.

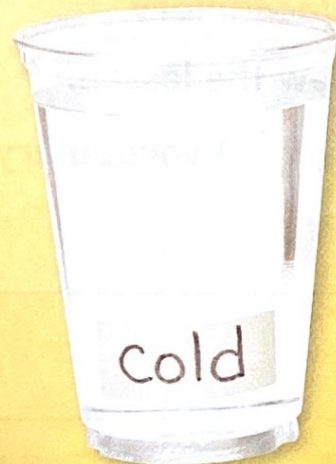
There are many ways to investigate. But many scientists follow a sequence, or order of events. Here's one possible sequence. First, scientists may observe and ask a question.

Active Reading

Clue words can help you find the order of things. **First** is a clue word. Circle this clue word in the paragraph above.



Does food coloring spread faster in cold water or warm water?



► What objects will these children use for their test? Circle them.

Now, scientists can make a hypothesis. A **hypothesis** is a statement that can be tested. Then scientists plan a fair test. The scientists list the materials they will need and the steps they will take to do their test.

Food coloring spreads faster in warm water.



Let's Test It!

Next, the scientists are ready to do their test. They follow their plan and record what they observe.

Active Reading

Clue words can help you find the order of things. **Next** is a clue word. Circle this clue word in the paragraph above.



These children test whether food coloring spreads faster in cold water or warm water.

After the test, scientists **draw conclusions**. They use the information they have gathered to decide if their results support the hypothesis. Finally, they write or draw to **communicate** what they learned.



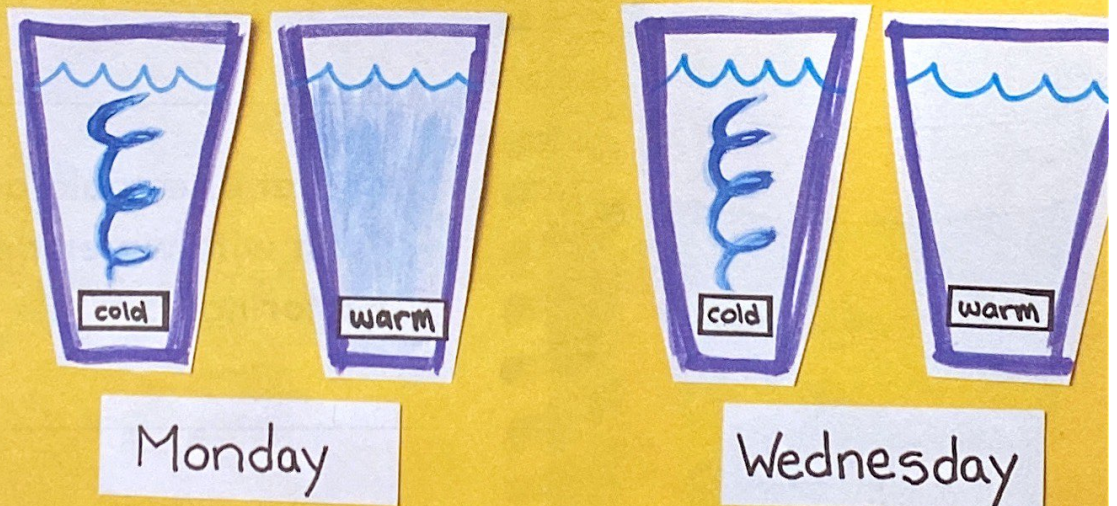
▶ How does the temperature of water affect how fast the food coloring spreads? Draw a conclusion.

▶ What else could a scientist test with water and food coloring?

Let's Check Again!

Scientists do the same test a few times. They need to make sure that they get similar results every time. In this investigation, the food coloring should spread faster in warm water every time.

Our Food Colori



▶ Look at the warm cup for both Monday and Friday. Draw a conclusion. Color in the warm cup for Wednesday to show what it should look like.



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Do the Math!

Measure Length

Choose an object. Use a ruler to measure the object's length. Measure it three times. Record.

Length of _____	
Measure 1	
Measure 2	
Measure 3	

1. How do your numbers compare?

2. Why do you think so?



Sum It Up!

1 Order It!

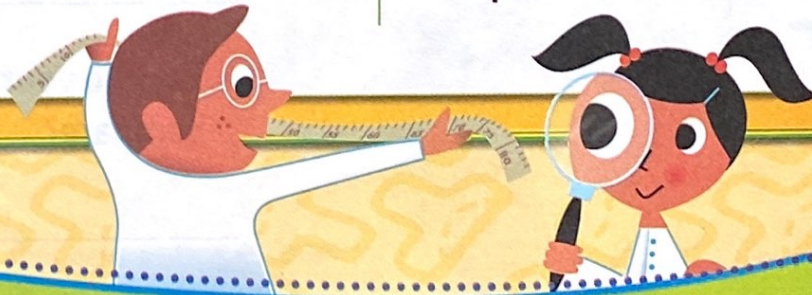
Number the steps from 1 to 4 to tell a way scientists investigate.

_____ Observe and ask a question.

_____ Do the test and record what happens.

_____ Draw conclusions and communicate.

_____ Make a hypothesis and plan a fair test.



2 Circle It!

Circle the correct answer.

Suppose you make a poster to show the results of your test. You are _____.

observing

planning your test

making a hypothesis

communicating

Name _____

Word Play

Circle the word to complete each sentence.

- 1 You use inquiry skills and science tools to learn.

You _____.

communicate

investigate

- 2 You take the first step to do an investigation.

You _____.

draw conclusions

observe

- 3 You make a statement that you can test.

You make a _____.

hypothesis

conclusion

- 4 You use information you gathered to explain what you learned. You _____.

draw conclusions

observe

- 5 You write to tell about the results of a test.

You _____.

communicate

ask a question



Apply Concepts

These steps show a test some children did. Label each box with a step from this lesson.

The children look at an ice cube. They ask—
Will it melt in the sun?

Observe and _____.



They form a statement that the ice cube will melt
in the sun.

_____.



They follow their plan. The ice cube melts! They
decide that the sun's heat caused the ice to melt.

Test and _____.



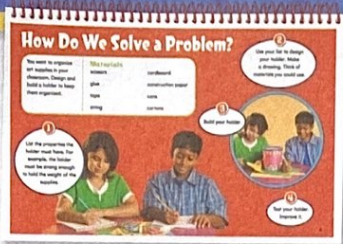
The children write and draw to tell the results
of their test.

_____.



Take It Home!

Family Members: Work with your child to plan an investigation. Use the steps from this lesson.



Name _____

Essential Question

How Do We Solve a Problem?

Set a Purpose

What problem do you want to solve?

Think About the Procedure

1 Why do you make a list of the properties the holder must have?

2 Why do you design your holder before you build it?

Record Your Data

Record the details of your plan in this chart.

The Problem
My Plan
Materials I need

Draw Conclusions

Sometimes it is helpful to make a model first before making the real thing. How can making a model help you solve a problem?

Ask More Questions

What other questions do you have about designing and making models to solve problems?
